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Inquiry based learning ppt

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1 Inquiry-based Learning: Linking Teaching with Learning Inquiry-based learning is the process of seeking knowledge through questioning and investigation. It's a natural approach used by scientists to create new knowledge and present it for review. The inquiry process begins by gathering information and data through our senses, then converting this info into useful knowledge. This complex process involves individuals attempting to answer questions, interpret data, share explanations, and collaborate. They analyze data to make informed decisions, using various tools such as journals, graphs, and reports. They express their ideas through different mediums like writing, drawing, or discussion. They communicate with parents, teachers, and peers about their progress and receive feedback. Students assess themselves by setting indicators for measuring their work and acknowledging areas of improvement. Continue Learning Forever! First, learn how to continue learning. This crucial skill can be taken beyond textbooks, master teachers, and school into a lifetime of self-directed learning. Here are some ways to integrate inquiry-based learning into your teaching: **Inquiry-Based Learning (IBL)**: A form of active learning that starts with questions, problems, or scenarios rather than presenting facts. It's often assisted by a facilitator. **Why Use IBL?**: To involve learners in the process and help them understand complex information. As Aristotle said, "Tell me and I forget, show me and I remember, involve me and I understand." The inquiry process begins with gathering data through human senses (seeing, hearing, touching, tasting, and smelling). It's not about finding the one right answer but seeking appropriate solutions to questions. **Inquiry Components**: A question or problem statement, followed by investigation, data collection, analysis, and reflection on what was learned. **Inquiry Procedures**: 1. Formulate a question related to the topic of inquiry. 2. Gather information from sources provided by the teacher or within learning resources. Explore more about IBL at 1. Tools readily available to pupils. 2. Information organized by categories or highlighting important details. 3. Discussion and analysis of the information for further understanding. 4. Conclusions made and related back to the original question. 5. Student reflections encouraged, relating back to the inquiry. In educational settings, particularly in science fairs, students take charge of their own investigative questions. Research by Banchi and Bell (2008) suggests that to effectively develop this inquiry skill, teachers should start with structured instruction at lower levels and progress towards open inquiry. For open inquiry activities to be successful, students must be motivated by intrinsic interests and have the skills to conduct their own research study. The benefits of inquiry-based learning include: * Learners taking ownership of their learning process. * Students engaging in hands-on learning using science process skills. * Increased critical thinking skills. * A culture that values learners' ideas. In an inquiry-based learning environment, the facilitator's role is to: * Reflect on the purpose and make plans for inquiry learning. * Facilitate classroom learning. * Serve as a resource for students. * Guide students through the learning process. The learner's role in this context includes: * Viewing themselves as learners in the process of learning. * Accepting an "invitation to learn" and engaging in an exploration process. * Raising questions, proposing explanations, and using observations. * Planning and carrying out learning activities. Inquiry-based learning can present challenges such as being time-consuming, messy, loud and chaotic, and unpredictable. However, these challenges can lead to more meaningful teachable moments and outcomes that provide useful knowledge about the natural and human-designed worlds. How do different environments and ways of learning interact? How can we communicate effectively within these spaces? One approach, Inquiry-Based Learning (IBL), involves specific processes people engage in during inquiry-learning, including: creating personal questions, collecting evidence to answer them, explaining the findings, connecting explanations to prior knowledge, and making arguments for those explanations. This process also entails developing questions, observing phenomena, researching existing information, designing experiments, analyzing data, and predicting future outcomes. Many educators mistakenly believe that IBL is simply following a traditional scientific method or teaching students to solve problems in six steps. However, it's more complex, focusing on intellectual problem-solving skills developed throughout the scientific process. Not every hands-on activity can be considered inquiry-based; there must be an emphasis on learning and intellectual growth. Some also assume there is only one true method of inquiry - Open Inquiry, which allows for open-ended investigation. While this might be the most authentic form, students must have foundational knowledge and skills before reaching such a high level of inquiry. A balanced approach to teaching science keeps students engaged and encourages higher-order thinking. Moreover, not all students will learn equally from an inquiry lesson; they must be invested in the topic for meaningful learning to occur. Teachers must adapt their questioning strategies to assess students' understanding accurately. Inquiry-based science requires significant time, effort, and expertise but offers substantial benefits. True Authentic Learning Can Take Place When Cost is Considered Inquiry-based learning can be implemented in various formats, including field-work, case studies, investigations, individual and group projects, and research projects. #### Key Points to Remember - Teachers act as facilitators in inquiry-based learning environments. - Student needs and ideas should be at the center of the learning process. - Multiple open-ended questions should be posed rather than waiting for the perfect question. - The common goal is to achieve understanding. #### Additional Considerations - Students' lines of inquiry should be remained faithful. - Teaching should occur directly on a need-to-know basis. - Encouraging students to demonstrate their learning using various media. #### Resources for Implementation - Edmodo: - Edweb: - Edutopia: - 4-H: #### Additional Tips and Recommendations - Based Learning 9: IBL - Inquiry-Based Learning by John Dsouza - YouTube: